

SL-1 NO-86/1

Time: 7:00 AM CDT, 03:18:31 CRT

5/18/73

PAO

This is Skylab Mission ... the hour.

The spacecraft at the present time is traveling over Asia, beginning a descending node. Planning continues on procedures to be used by the crew after their rendezvous with the Skylab space station. Work items now under consideration includes studying the effect. Our command module temperatures of holding the space station at the 55-degree pitch required for temperature balance in the workshop. They're also considering budgeting fuel for the reaction control system used to maneuver the command module. They're now selecting targets for television and photos during the period of reconnaissance from the command module. And they're also evaluating possible contamination effects from drive around, deployment of solar panels, removal of debris, and methods of limiting contamination to crew in cockpit by the reaction control exhaust during the period when the command module hatches open, and a standup of EVA is performed. During the night, internal temperatures have continued stable at approximately 105 degrees with the attitude held at a 55-degree pitch. No attempt has been made to improve the performance of attitude rate gyros, because modifications would require a return to solar inertial attitude and a consequent increase in temperatures on the Sun side of the orbital workshop. Instead, flight controllers are determining the spacecraft's attitude from data on the external skin surface temperatures and from the electrical power generated by the ATM solar panels. Flight controller is Charles Lewis. He'll be going off at 8 o'clock central daylight time. Mr. Lewis reports that to go into solar inertial would require an additional fourteen revolutions at 55-degree pitch to bring back the temperature to it's present level of ratio, being about 1 to 14 for solar inertial of this 55-degree pitch that they're traveling at now. Following next Friday morning's launch at 8:02 a.m. central daylight time, the command module is expected to intercept the workshop 2 minutes after loss of communication signal at Guam tracking station. And 15 minutes before signal is acquired at the Goldstone station in California. The television pass over the United States from California to the Merritt Island station will last approximately 17 minutes. Rendezvous and television will all be conducted in a daylight pass beginning before Guam. However, with this new launch time, no television will be available from Carnarvon, where darkness will prevail at - if there is a nominal launch. This is Skylab Mission Control at 4 minutes and 10 seconds after the hour.

END OF TAPE

SL-1 NC-67/1

Time: 8:00 a.m. CDT, 3:19:30 GMT
5/18/73

PAO

At 1 second after the hour, this is Skylab Mission Control. The Skylab space station is presently passing over South America on an ascending node, traveling from southwest to northeast just at the beginning of revolution number 56. The station is traveling at 25,111 feet per second in a near circular orbit 235.7 nautical miles at its lowest point and 239.3 at its highest point. Internal temperatures recorded at the last tracking station at Honeyzuckle show storage lockers and internal walls of the crew wardroom with temperatures ranging from 90 degrees Fahrenheit to 109 degrees Fahrenheit. Off-going flight director, Charles Lewis, is now briefing Donald Puddy, whose crimson team of flight directors will be taking over for the next 12-hour shift. We expect Flight Director Lewis to be available at an 8:30 central daylight time for a change-of-shift briefing in building 1 at Johnson Space Center. This is Skylab Mission Control at 1 minute and 5 seconds after the hour.

END OF TAPE

SL-1 MC-68

Time: 8:44 a.m. CDT, 3:20:14 CET

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PAO This is Skylab Mission Control at 44 minutes and 14 seconds after the hour. Flight Director Charles Lewis has now left Mission Control and turned over his duties to Donald Puddy. He's expected to be in building 1 for a press conference in approximately 7 to 10 minutes. This is Skylab Mission Control at 44 minutes and 30 seconds after the hour.

END OF TAPE

SL-1 MC-69/1

Time: 10:00 a.m. CDT, 03:21:30 CET

5/18/73

PAO

Exactly on the hour, this is Skylab Mission Control. The spacecraft is now passing over Europe at the very highest point in its ascending node. We have now some information on work that's being done on the background. Design reviews are underway for the three options being considered for screening this orbital workshop from the Sun's heat. Space and weight limitations aboard the command module limit the size of the protective device to approximately 5 feet long by 10 inches in diameter, with a weight no greater than 90 pounds. Tools to be used in repairing the orbital workshop are being developed by engineers with the Marshall Spaceflight Center in Huntsville, Alabama. Food items in the orbital workshop section of the Skylab space station are presently being tested for changes in caloric content. An upper temperature limit for food stored in lockers on the workshop was previously established at 130 degrees for a 10-day period, although some loss of taste and palatability are expected at temperatures above 85 degrees. Five food items may possibly be endangered by temperatures in the 115 to 130 degree range. As a result, to protect the crew, an upper limit of 115 degrees for a 10-day period has now been tested and established. Since these food items are located at various places in the workshop, they should present temperatures which vary from one place to - I'm sorry, the present temperatures, which vary from one place to another in the stowage areas, if they should continue, should not affect all five food types. These five items represent approximately 5 percent of the total workshop. But even should all items be damaged, this would not affect the length of possible missions. There's about 10 to 12 percent more food aboard the space station than would be required for the three flight periods originally planned, a total of 120 days. The most recent list of changes in items to be carried to the Skylab space station includes more than 50 new items to be added and about two dozen to be deleted. Some of the new items, now being planned for taking up by the crew, will replace those that might have been damaged by high temperatures in the workshop area. These include film cassettes and magazines used for earth resources photography, thermal protection gloves, and a drug replacement kit. To aid in assessing damage, the crew may also carry a pair of 10 power binoculars, a 400-millimeter lens for their 35-millimeter camera, and a 140-foot spool of 16-millimeter film. Tools for repairing the solar array and for shielding the workshop from the Sun are also on the preliminary list. Some experimental equipment may have to be deleted to gain this room. Tentative figures include

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pieces that may have been used in experiments S020, T025, and M555. These are, however, still preliminary assessments, and people in the flight operations management room inform us that there may be changes made. This is Skylab Mission Control at 3 minutes and 7 seconds after the hour.

END OF TAPE

SL-1 MC-70/1

Time: 11:00 a.m. CDT

5/18/73

PAO

This is Skylab Mission Control on the hour.

Preliminary reports from the flight operations management room at Skylab Mission Control in Houston indicates some changes in flight plan for the first 28-day mission. The crew is at present expected to remain aboard the command module for up to 5 days after launch to determine whether or not a full 28-day mission will be possible. This is in contrast to the single night originally planned. This will require planners to include additional items for personal hygiene and waste management. No details are yet available on the size and weight of the hygiene kit. Of the 270 different scientific and engineering experiments planned for the three Skylab missions, only four are now under consideration for possible deletion or partial deletion from the first 28-day flight. At the present time, experiment T025, which studies changes induced in the vacuum around Skylab because of waste water dumping and attitude control thruster firings, is - and requires a clear view from the scientific airlock on the Sun side of the orbital workshop, is one of those under consideration for deletion. Another experiment, requiring the use of the scientific airlock, is S020, the ultraviolet X-ray solar photography study, which will determine the temperature, density, and composition of certain solar flare gases. This, too, is under consideration for a possible deletion. A third experiment now expected to be deleted is part of experiment T027, the part dealing with the sample array. For this project, to determine changes in optical properties of 200 sample specimens, the scientific airlock must also be used to extend the sample outside the space station. A partial deletion is also under consideration for experiment S073. Those experiments to repeat are: T025, S020, T027, and possibly S073. These are tentative changes depending on other requirements still under study. During the past hour, the spacecraft has made a slight attitude correction to dump the control moment gyros. This took place over the Australian tracking stations. This is Skylab Mission Control at 2 minutes and 27 seconds after the hour.

END OF TAPE

SL-1 NO-71/1

Time: 12:00 Noon CDT, 03:23:30 CEST

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PAO

This is Skylab Mission Control at 2 seconds after the hour. Midway through its 58th revolution, the spacecraft is now traveling on a descending node over the Indian Ocean. It is on the dark side of the Earth. At the highest point in its orbit, it is now 237.7 nautical miles above the surface of the Earth; at its lowest point, 235.4 nautical miles. Present speed for this space station is 25,096.6 feet per second. The period of revolution is 1 hour 33 minutes and 22.3 seconds. Flight Director Donald Puddy has requested his guidance and navigation controller to provide him with instructions that will allow the greatest possible conservation of gas used by the thruster attitude control system. While maneuvering required to provide stable temperatures in the orbital workshop section of the space station has used about 24 percent of the total supply of attitude control gas, the remaining gas is more than double the minimum amount required to conduct all of the experiments originally planned for an 8-month period, with three separate astronaut teams. Nevertheless, flight controllers are taking action to maintain as large an excessive reserve of attitude control fuel as possible. Notes on work, that might be done by the first Skylab crew to deploy one of the solar panels that is believed to have stuck when the meteoroid shield was torn off shortly after Monday's launch, suggest that the efforts will be made during the first daylight pass of the standup EVA. Attempts to deploy one solar wing will be made only if the crew feels that it can be done without difficulty. Because the wing has been on the shadowed part of the space station, the temperature may be too low for the solar panels to move out freely without further assistance. Even if obstructions are removed by the astronaut, if the crew does not believe it can free the solar panels, which would provide another 6000 watts of electrical generating power, engineering photos will be taken for use in planning the following second Skylab manned mission. This is Skylab Mission Control at 2 minutes and 10 seconds after the hour.

END OF TAPE

SL-1 MC72/1

Time: 13:00 CDT, 4:00:30 GRT

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PAO

This is Skylab Mission Control at 1 second after the hour. The spacecraft at this time is passing over Michigan from the southwest to the northeast, and just about to begin its 59th revolution. At its highest point in the orbit, the spacecraft reaches a height of 238.0 nautical miles, and the low point in its orbit is 235.7 nautical miles. It's revolving once every 1 hour 33 minutes and 12.4 seconds. The speed at the present time is 25,098.8 feet per second. A rough schedule of the events following a Friday launch at 8:02 central daylight time has been worked out for planning purposes. The command module was expected to intercept the space station over the North Pacific about 3:43 p.m. central daylight time two minutes after communication signal is lost at Guam tracking station. The space station will be rolled to place both solar array wings in sunlight. Then the commander will circle the space station, pointing the command module nose at Skylab as he surveys the damage to determine, first, whether debris must be cleared, second, whether solar wing extension is possible and will be attempted, and, third, whether the thermal blanket will be deployed. If these are all - these acts are all completed in sunlight with 17 minutes of television time, from 3:57 to 4:13 p.m. central daylight time, available over the United States, then further activities will be performed. If docking is not completed before sunset, at about 4:24 p.m. central daylight time, the crew will wait until it comes back into the sunlight. At that time they will soft dock, using capture latches only, eat, and prepare for a standup extravehicle activity. Repeating the first paragraph for Houston. The spacecraft at the present time is traveling out over the northern part of the United States from southwest to northeast. Just beginning revolution 59. The high point in its orbit is 238.0 nautical miles. The low point in its orbit is 235.7 nautical miles. The revolutionary period is 1 hour 33 minutes and 12.4 seconds, with a speed of 25,098.8 feet per second. This is Skylab Mission Control at 2 minutes and 40 seconds after the hour.

END OF TAPE

SL-1 NC-73/1

Time: 2:00 p.m. CDT, 04:01:30 GET

5/18/73

PAO This is Skylab Mission Control on the hour. The spacecraft is beginning an ascending node over the South Pacific. It is now in range of the Honeysuckle tracking station. It's in the beginning of revolution number 59. The high point in the orbit is 236.8 nautical miles; low point in the orbit is 235.9 nautical miles. Present velocity is 25,102.5 feet per second. The revolutionary period, 1 hour 33 minutes 12.7 seconds. A detailed flight plan for the first day of a manned flight to rendezvous with the Skylab space station has been prepared for review by flight controllers. Based on a launch time of 8:02 a.m. central daylight time, the preliminary flight plan indicates that preparations for a standup EVA will be made following the completion of the dinner meal, at approximately 5:02 p.m. central daylight time. An estimated time for the standup EVA is 6:32 p.m. CDT in the middle of the 6th revolution. The standup EVA is expected to end approximately at the end of the 8th revolution at about 9 p.m. central daylight time. There will be a briefing at 5:15 with the present flight director, Don Puddy, in building 1 at Houston. That's 5:15 central daylight time. This is Mission Control at 1 minute and 30 seconds after the hour.

END OF TAPE

SL-1 MC-74/1

Time: 3:09 p.m. CDT, 04:02:39 GET
5/18/73

PAO This is Skylab Control at 2000 hours GMT plus 9 minutes, near the top of the hour. The unmanned space station at the present time is over the lower portion of Africa, out of contact of any stations. Acquisition of signal next will be attained in about 23 minutes. As was stated earlier, preliminary flight planning for the Skylab 2 mission will permit the crew to stay aboard the command service module for up to 5 days, if that is necessary. They will, during the daytime, enter the OWS, activate as they can, but plan to live in the command service module until orbital workshop temperatures are more comfortable and reach a more habitable level. The planning indicates that the crew can leave the CSM and live full time in the OWS if the more comfortable temperature levels can be reached. Now, comfortable levels in space mean relatively the same as comfortable levels here on Earth, within the 70 degree range Fahrenheit. If work conditions in the orbital workshop become too warm for the crew, then they periodically will return to the CSM and continue whatever required tasks they were doing at that particular time. We expect to have a status report from Skylab Program Manager, William Schneider, at approximately 3:30 p.m. central daylight time. And, for the information of those newsmen who may wish to ask questions, we are considering a 5:15 p.m. central daylight time change-of-shift briefing involving the off-going flight director, Don Puddy. That briefing will take place in the News Center briefing room at the Johnson Space Center, and we will carry question and answer capability from the Cape. At 20 hours 12 minutes and 40 seconds Zulu time, this is Skylab Control.

END OF TAPE

SL-1 MC-75/1

Time: 15:33 CDT, 4:03:03 GMT
5/18/73

PAO: This is Skylab Control at 20 hours 33 minutes Greenwich mean time with a Skylab status report. The flight of Skylab 1 continues and the systems operation is under the control of the ground team. Detail reports will continue to be made from the Johnson Space Center. Based on the latest orbital data, preparations for the launch of Skylab 2 are continuing for a T-0 time at 900 hours, 9 o'clock Eastern daylight time on Friday May 25. The stowage of the CSM will be delayed as long as possible to give the maximum time for fabrication of new EVA items. The stowage will be accomplished in the early morning hours of Thursday May 24. All stowage items will be at KSC by noon Tuesday and will be available for bench review by the flight crew. The stowage of the CSM includes resupply of items which may have been damaged by the high temperature. At least two kits to correct the thermal problem, tools for the repair, EVA garmets, and other equipment needed for a five day CSM mission. Off loaded items are mainly those associated with the solar scientific air lock which cannot be used when the sail is deployed. The development of the EVA hardware and techniques being considered for correction of the thermal problem is proceeding well. The standup EVA procedures and hardware from the CSM are proceeding at the Johnson Space Center with astronauts Charles Conrad, Dr. Joseph Kerwin, Paul Weitz practicing rendezvous fly around and station keeping. One G training of the EVA is on schedule. Astronauts Rusty Schweickart and Story Musgrave are testing the EVA equipment in the Marshall water emersion facility in Huntsville. Hardware is being built for both of these techniques and training equipment is planned for use by the prime crew on Saturday, here at the Johnson Center. Final evaluation and training for the prime crew for the prime flight crew, is scheduled for Monday and Tuesday at the Marshall water emersion facility. In addition, two alternate systems are being pursued which can be deployed through the scientific airlock therefore do not require EVA. One, an inflatable device much like a life raft is being examined at Marshall, while another with mechanical umbrella type mechanisms, is being pursued at the Johnson Center. Flight planning for the 28 day Skylab mission is being developed and involves a rendezvous, fly around inspection, and then a sequence involving safe deployment and docking or vice versa, if the other technique is used; followed by a relatively normal mission with prime emphasis on experiments and science. Final decisions will be made on Thursday at the Program Directors launch minus one day review at the

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Time: 15:33 CDT 4:03:03 GBT
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Kennedy Space Center. At 20:00 hours 27 minutes GMT, this
is Skylab Control.

END OF TAPE

SL-1 MC-76/1

Time: 16:29 CDT, 4:03:58 GET

5/18/73

PAO This is Skylab Control, at 29 minutes after the hour. The Skylab space station at this time is over the Atlantic Ocean, in contact with the Canary Islands ground site. During its last stateside pass, the systems that were monitored by the flight controllers showed no significant change, indicating a stable vehicle at this time. Skylab space station is on revolution number 61, flying at an altitude of 238.6 miles at its high point, and 235.7 nautical miles at its low point. And its time required to orbit the Earth is 1 hour 33 minutes and 21 seconds. A reminder that at 5:15 p.m. central daylight time, we will have a change of shift briefing involving Don Puddy, who is the Flight Director for the crimson team. And appearing with him on the rostrum is George B. Hardie, or will be George B. Hardie, who bears the title of Chief of System Integration Branch, the Marshall Space Flight Center Skylab Program Office. We will have two-way question and answer capability between the Kennedy Space Center and the Johnson Space Center. At 31 minutes after the hour, this is Skylab Control.

END OF TAPE